Abstract of the Disclosure

The present invention is directed to presqualene diphosphate (PSDP) analogs having an active region of natural PSDP and a metabolic transformation region resistant to rapid intracellular inactivation *in vivo*. For example, PSDP and its stable analogs can inhibit neutrophil signal transduction events in cellular activation that result in the generation of active oxygen species, regulation of leukocyte adherence, both homotypic (leukocyte-leukocyte) or heterotypic adherence with leukocytes and epithelial cells of mucosal origin or endothelial cells of vascular origin. These analogs can also be used to regulate leukocyte-dependent tissue injury.